



STIC Search Report

EIC 3700

STIC Database Tracking Number: 224927

TO: Robert Utama
Location: RND 6a58
Art Unit: 3714
Friday, May 18, 2007

Case Serial Number: 10/694706

From: Emory Damron
Location: EIC 3700
Randolph 4-B-21
Phone: 571-272-3520
Emory.Damron@uspto.gov

Search Notes

Dear Robert,

Please find below your search results.

References of potential pertinence have been tagged, but please review all the packets in case you like something I didn't.

Of those references which have been tagged, please note any manual highlighting which I've done within the document.

There may be a few decent references contained herein, but I'll let you determine how useful they may be to you.

Please contact me if I can refocus or expand any aspect of this case, and please take a moment to provide any feedback (on the form provided) so EIC 3700 may better serve your needs. Good Luck!

Sincerely,

Emory Damron

Technical Information Specialist

EIC 3700, US Patent & Trademark Office

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Access DB# 224927

SEARCH REQUEST FORM
Scientific and Technical Information Center

Requester's Full Name: Robert Utama Examiner #: 83331 Date: 05/14/2007
Art Unit: 3714 Phone Number 302-1676 Serial Number: 101604706
Mail Box and Bldg/Room Location: RA10 6A 50 Results Format Preferred (circle): PAPER DISK E-MAIL

If more than one search is submitted, please prioritize searches in order of need.

Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: Learning Method and system that considers a students concentration

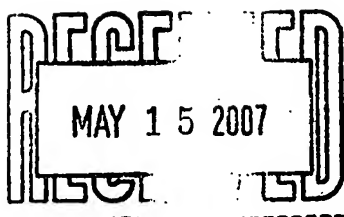
Inventors (please provide full names): H6, Chi Fai Tong, Peter P level

Earliest Priority Filing Date: 10/28/2001

**For Sequence Searches Only* Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.*

Features ~~that~~ that requires searching:

- an computer based learning system (CBT or ^{e-learning} ~~teaching~~ system)
- has two windows, ^{the first} ~~addition~~ windows containing the learning materials
- classify ^{or determine} ~~to~~ the student is not paying attention
 - if: (I) the students fails ^{to enter} ~~the~~ ~~own~~ ~~own~~ inputs to the first ~~own~~ window.
 - or
 - (II) when there is one or more inputs ~~the~~ by the user the second window.



2004-0137414

"COMPUTER LEARNING ATTENTION SPAN"

XCOPY



STIC Search Results Feedback Form

EIC 3700

Questions about the scope or the results of the search? Contact **the EIC searcher or contact:**

John Sims, EIC 3700 Team Leader
RND 8B35, Phone 2-3507

Voluntary Results Feedback Form

➤ I am an examiner in Workgroup: 3714 Example: 3730

➤ Relevant prior art **found**, search results used as follows:

- ☐ 102 rejection
- ☐ 103 rejection
- ☐ Cited as being of interest.
- ☐ Helped examiner better understand the invention.
- ☐ Helped examiner better understand the state of the art in their technology.

Types of relevant prior art found:

- ☐ Foreign Patent(s)
- ☐ Non-Patent Literature
(journal articles, conference proceedings, new product announcements etc.)

➤ Relevant prior art **not found**:

- ☐ Results verified the lack of relevant prior art (helped determine patentability).
- ☐ Results were not useful in determining patentability or understanding the invention.

Comments:

Drop off or send completed forms to STIC/EIC3700 RND 8B31



Set	Items	Postings	Description
S1	490312	2115169	S LEARN? OR INSTRUCT? OR EDUCAT? OR TUTOR? OR ELEARN? OR TRAIN? OR TEACH? OR SELFTEACH?
S2	44	250	S CBT(5N) (COMPUTER OR BASED OR TRAIN?) OR SELFLEARN? OR SELFINSTRUCT? OR SELFEDUCAT? OR SELFTUTOR?
S3	1232759	4686622	S COMPUTER? OR WORKSTATION? OR DESKTOP? OR DATAPROCESSOR? OR MICROPROCESSOR? OR CENTRALPROCESSOR? OR CPU? ?
S4	835033	2479876	S SERVER? OR (DATA OR MICRO OR CENTRAL) () (PROCESSOR? OR CONTROLLER?) OR PC OR MICROCOMPUTER?
S5	1186188	5776054	S KIOSK? OR CONSOLE? OR TERMINAL? OR CUBICL? OR BOOTH?
S6	192957	2064901	S S1:S2 AND S3:S5
S7	61966	446659	S DETERMIN? OR ASSESS? OR TEST? OR MEASUR? OR CLASSIF? OR RATE? OR RATING? OR GRADE? OR GRADING?
S8	53975	360064	S EVALUAT? OR MONITOR? OR TRACK? OR AUDIT? OR ASCERTAIN? OR DIAGNOS? OR IDENTIF? OR OBSERV?
S9	18555	96240	S FEEDBACK? OR FEED? () BACK OR APPRAIS? OR ANALY? OR TROUBLESHOOT? OR PROGNOS? OR ASSAY?
S10	43619	252668	S STUDENT? OR PARTICIPANT? OR PERSON? OR PUPIL? OR TUTEE? OR INDIVIDUAL? OR CUSTOMER? OR CLIENT?
S11	3986	25897	S SUBSCRIBER? OR AUDIENCE? OR VIEWER? OR WATCHER? OR ATTENDANT?
S12	86	378	S (PAY OR PAYS OR PAYED OR PAYING) () ATTENTION? OR ATTENTION() SPAN? ? OR LEVEL(2N) CONCENTRATION
S13	13	34	S CONCENTRAT? (2N) (ABILITY OR ABLE OR CAPABLE? OR CAPABILIT?) OR ABSENT() MINDED?
S14	0	0	S LACK(2N) (FOCUS? OR ABSORB? OR ABSORP? OR IMMERS? OR ENGROSS? OR ATTENTION?) OR INATTENTIV?
S15	112	157	S UNINTEREST? OR DISINTEREST? OR DISOBEY? OR NEGLECT? OR NEGLIGEN?
S16	62027	272747	S INPUT? OR CLICK? () PER() (SECOND? OR MINUTE? OR HOUR?) OR MOUSE() CLICK? OR MOUSECLICK?
S17	3092	8847	S PUSH SWITCH? OR PRESS SWITCH? OR PUSHACTUAT? OR PRESSACTUAT? OR SELECTOR? OR GRAPHIC? () INPUT? () DEVIC?
S18	168	709	S CLICKBUTTON? OR CLICKSWITCH? OR CLICKACTUAT? OR TOGGL? OR PRESSTOGGL? OR CLICKTOGGL? OR PUSHTOGGL? OR MANIPULAT? () CONTROL? () DEVIC?
S19	651	2867	S MOUSEBUTTON? OR MOUSESWITCH? OR MOUSEACTUAT? OR MOUSETOGGL? OR INPUT? () KEY? ? OR JOYSTICK? OR JOY() STICK?
S20	122	490	S CLICKBOX? OR CLICK? () (BOX OR BOXES) OR TRACK() BALL? OR TRACKBALL?
S21	63297	399455	S FIRST? OR 1ST OR PRIMARY OR INITIAL? OR ORIGINAL? OR LEADOFF? OR MAIN OR CHIEF OR INTRODUCTORY?
S22	69731	318189	S ONE OR NUMBER() 1
S23	50839	302747	S SECOND? OR 2ND OR ANOTHER? OR SLAVE? OR SUPPLEMENT?
S24	46451	178704	S SUBSIDIAR? OR DIFFERENT? OR TWO OR PAIR OR DOUBLE OR TWIN OR TANDEM OR DUAL
S25	61251	286743	S TWO(2W) MORE OR MULTIPLE? OR MORE(2W) ONE OR MULTIPLICIT? OR MANY
S26	16087	75984	S WINDOW? OR SCREEN? OR CO
S27	45639	324129	S GUI? ? OR GII? ? OR GDI? VISUAL?) (2W) (INTERFACE? OR APP? ? OR APPLICAT? OR UTI
S28	5841	23165	S COMPUTER? () (SCREEN? OR V OR TOOL? ? OR UTILIT?)
S29	187	1050	S USERINTERFAC? OR (DROP C DESKTOP) () MANAGER? OR PULLDOWN?
S30	3565	19691	S UI OR UIS OR (GRAPHIC? C DATA?) (2N) (MENU? OR PAGE? OR SCREEN?)
S31	47371	347845	S DISPLAY? OR SCREEN? OR I
S32	6010	33066	S (DISPLAY? ? OR GRAPHIC?
S33	30190	218395	S GRAPHIC? OR VIDEO? OR P VISUAL?

Pat Lit

BIBLIOG

FILES

S34	2524	6844	S CRT? ? OR CATHODE?(2W)TUBE OR COMPUTER()MONITOR?
S35	71361	311241	S TIME? OR TEMPOR? OR DELAY? OR LAPSE? OR CLOCK? OR ELAPS?
S36	6243	20606	S TIMING OR STOPWATCH OR TIMEOUT OR TIMESTAMP? OR STOP()WATCH?
OR TIMETABLE?			
S37	2940	10030	S CHURN? OR HOURGLASS? OR DURATION? OR LATENC? OR TIMEGAP? OR
TIMERANGE? OR TIMELIMIT?			
S38	128	1146	S START?()POINT?(3N)(END OR ENDING)()POINT? OR
STARTPOINT?(3N)ENDPOINT?			
S39	50	206	S AU=(HO C? OR HO, C? OR TONG P? OR TONG, P?)
S40	0	0	S HO(2N)(CHI OR CHIFAI) OR TONG(2N)(PETE OR PETER)
S41	20893	50834	S IC=(A61B? OR G06K? OR G09B? OR A63F?)
S42	96139	275671	S MC=(T01? OR W04? OR S05? OR T04?)
S43	109	3154	S S6 AND S7:S9 AND S12:S15
S44	87	3441	S S43 AND (S10:S11 OR S16:S20 OR S35:S38)
S45	2	177	S S39 AND S43
S46	12	407	S S43 AND S21:S25(10N)S26:S34
S47	53	2386	S S43 AND S41:S42
S48	84	2750	S S6 AND S7:S9 AND DISTRACT?
S49	192	7655	S S43:S48
S50	128	6481	S S49 AND S41:S42
S51	192	8783	S S49:S50
S52	110	6569	S S51 AND AC=US/PR
S53	62	4639	S S52 AND AY=(1970:2001)/PR
S54	51	3031	S S52 NOT AY=(2002:2007)/PR
S55	82	2442	S S51 NOT S52
S56	27	1421	S S55 AND AY=1970:2001
S57	68	1763	S S55 NOT AY=2002:2007
S58	134	7204	S S53:S54 OR S56:S57
S59	134	6973	IDPAT (sorted in duplicate/non-duplicate order)
S60	134	6973	IDPAT (primary/non-duplicate records only)
; show files			

[File 347] **JAPIO** Dec 1976-2006/Dec(Updated 070403)

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[File 350] **Derwent WPIX** 1963-2007/UD=200730

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**File 350: DWPI has been enhanced to extend content and functionality of the database. For more info, visit <http://www.dialog.com/dwpi/>.*

60/5/23 (Item 23 from file: 350) [Links](#)

Derwent WPIX

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0012312711 *Drawing available*

WPI Acc no: 2002-254195/200230

Related WPI Acc No: 2001-487810; 2001-496202; 2001-606867; 2002-535660; 2003-566682; 2003-644533; 2006-045140

XRPX Acc No: N2002-196297

Graphical user interface implementing apparatus for computer system, makes display widget visible or faded out of view in display, based on user touching condition of mouse

Patent Assignee: MICROSOFT CORP (MICT)

Inventor: HINCKLEY K P

Patent Family (1 patents, 1 countries)

Patent Number	Kind	Date	Application Number	Kind	Date	Update	Type
US 6333753	B1	20011225	US 1998100261	P	19980914	200230	B
			US 1998200325	A	19981125		

Priority Applications (no., kind, date): US 1998100261 P 19980914; US 1998200325 A 19981125

Patent Details

Patent Number	Kind	Lan	Pgs	Draw	Filing Notes	
US 6333753	B1	EN	24	10	Related to Provisional	US 1998100261

Alerting Abstract US B1

NOVELTY - A touch sensitive mouse generates output signal responsive to whether user is touching or not touching the mouse. Based on the output signal, the display widget (1010) such as icon, tool, scroll box, dialog box, combo box, is visible or faded out of view in the graphical display (1020).

DESCRIPTION - An INDEPENDENT CLAIM is also included for graphical user interface implementing method.

USE - For implementing graphical user interface used for **computer** system, with on-demand display function.

ADVANTAGE - As widget is displayed corresponding to user's mouse touching condition, display clutter is reduced and available application screen area is increased, thus user experience is improved.

DESCRIPTION OF DRAWINGS - The figures show the example of screen display showing fade-in and fade-out of display widget.

1010 Display widget

1020 Graphical display

Title Terms /Index Terms/Additional Words: GRAPHICAL; USER; INTERFACE; IMPLEMENT; APPARATUS; COMPUTER; SYSTEM; DISPLAY; VISIBLE; FADE; VIEW; BASED; TOUCH; CONDITION; MOUSE

Class Codes

International Patent Classification

IPC	Class Level	Scope	Position	Status	Version Date
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G06F-003/00			Main		"Version 7"
G06F-003/02; G06F-003/14; G06T-005/50			Secondary		"Version 7"

US Classification, Issued: 345768000, 345156000, 345779000, 345639000, 345592000

File Segment: EngPI; EPI;

DWPI Class: T01; T04; P85

Manual Codes (EPI/S-X): **T01-C02B1; T01-J12B1; T01-J12D; T04-F02B1**



US006333753B1

(12) **United States Patent**
Hinckley

(10) Patent No.: **US 6,333,753 B1**
(45) Date of Patent: **Dec. 25, 2001**

(54) **TECHNIQUE FOR IMPLEMENTING AN ON-DEMAND DISPLAY WIDGET THROUGH CONTROLLED FADING INITIATED BY USER CONTACT WITH A TOUCH SENSITIVE INPUT DEVICE**

(75) Inventor: **Kenneth Paul Hinckley, Kirkland, WA (US)**

(73) Assignee: **Microsoft Corporation, Redmond, WA (US)**

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

(21) Appl. No.: **09/200,325**

(22) Filed: **Nov. 25, 1998**

Related U.S. Application Data

(60) Provisional application No. 60/100,261, filed on Sep. 14, 1998.

(51) Int. Cl.⁷ **G06F 3/00; G06F 3/02; G06F 3/14; G06T 5/50**

(52) U.S. Cl. **345/768; 345/156; 345/779; 345/639; 345/592**

(58) Field of Search **345/145, 156, 345/157, 163, 173, 326, 339-340, 344, 348, 431-432, 435, 473**

(56) **References Cited**

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(List continued on next page.)

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W. Buxton, "Living in Augmented Reality: Ubiquitous Media and Reactive Environments," *Computer Systems Research Institute, University of Toronto & Alias/Wavefront Inc.*, pp. 1-17, downloaded on Feb. 1, 1999 from <http://www.dgp.utoronto.ca/OTP/papers/bill.buxton/augmentedReality.html>.

(List continued on next page.)

Primary Examiner—Raymond J. Bayerl

Assistant Examiner—X. L. Bautista

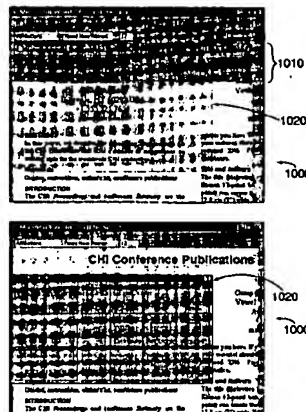
(74) Attorney, Agent, or Firm—Banner & Witcoff, Ltd.

(57)

ABSTRACT

A technique, specifically apparatus and accompanying methods, for implementing an on-demand "Tool Glass" based desktop user interface. The interface uses at least one input device capable of detecting touch. A sensed touch transition reflective of a user then making or breaking contact with the device, such by touching the device with a finger of a non-preferred hand or lifting his/her finger from the device, causes a Tool Glass sheet to be displayed or dismissed. To prevent user distraction, these detected transitions preferably initiate corresponding predefined animation sequences that occur over preset time intervals in which the Tool Glass sheet either begins to fade into view as soon as user contact begins and then begins to fade out from view as soon as user contact ends. Such touch sensing can readily be used to provide "on-demand" display and dismissal of substantially any display widget, e.g., a toolbar, based on sensed contact between each hand of a user and a corresponding input device, such as between a preferred hand and a touch sensitive mouse. Through use of this interface, display clutter can be reduced and displayed application screen area increased at appropriate times during program execution consistent with user action and without imposing any significant cognitive burden on the user to do so; thereby, advantageously improving a "user experience".

92 Claims, 8 Drawing Sheets



software could attempt to infer touch and release events by observing mouse motion and choosing time-out periods. However, such inferences will likely have an error rate associated with them; nonetheless, such inferences may prove useful in situations where a Touch Mouse is not available.

Alternatively, a track ball modified to detect touch, or having appropriate peripherally located buttons, could be used in lieu of the Touch Mouse or the touchpad to provide on-demand sensing. Moreover, the touchpad could be replaced by another Touch Mouse or a conventional mouse—though, with a conventional mouse, mouse clicks or software inference (as noted above) could be used as a substitute to generate user events which the former would generate based on touch. Furthermore, a second touchpad, with appropriate peripheral buttons (as shown in FIG. 3), could be used in lieu of a Touch Mouse; hence, concurrently utilizing two touchpads, rather than one and a Touch Mouse.

Moreover, a touch sensing keyboard, capable of separately sensing contact with each hand, in combination with a conventional mouse could be used in lieu of or in combination with both the Touch Mouse and the touchpad, or in conjunction with the Touch Mouse to provide on-demand display widget display and dismissal. Here, a toolbar(s) could completely fade-out starting when a user enters text through the keyboard. If one of the touch sensors on the keyboard were to detect that one hand left the keyboard while the other remained in contact with the keyboard, then the toolbars could begin to fade-in. As such, by the time the user were to grab a mouse with his(her) preferred hand, (s)he would begin to see the toolbar. If a Touch Mouse were used, then once the mouse sensed contact with the user, the interface could complete the fade-in of the toolbar rendering it completely visible. On the other hand, if the user did not grab the Touch Mouse within a short period of time after his(her) hand left the keyboard, the interface could then completely fade-out the toolbar. These touch sensors could also be used to uniquely detect handedness (i.e., left or right) of the user. Here too, non-contact proximity sensors could be integrated into the keyboard, in lieu of or in combination with contact sensors, to detect when the user's hand(s) is close to the keyboard but not actively engaging it.

Furthermore, my inventive interface could be extended such that when an application first starts, the toolbars would be visible and a document would appear underneath the toolbar(s). Whenever a user releases the Touch Mouse (or other touch sensitive input pointing device for preferred hand use), a margin will appear above the document, thus permitting the user to perceive the top of the document. Doing so prevents this portion of the document from being covered by the toolbar(s)—as might conventionally occur. Moreover, when the application first starts and the user is not contacting the Touch Mouse, the toolbar(s) could be displayed so that the user is not surprised when the toolbar(s) subsequently vanishes. In this instance, the toolbar(s) could disappear only after the user first touches and then releases the Touch Mouse—in effect the user provides an explicit input event to trigger a toolbar transition and thus understands its disappearance. Where a user engages in a click-through-and-drag operation with a Tool Glass sheet and in conjunction with the Touch Mouse, the inventive interface could be extended such that a toolbar(s) will not fade back in until the user releases a mouse button, even if (s)he were to lift his(her) finger off the touchpad. If the user were still touching the touchpad, then the Tool Glass sheet could fade back in once the mouse button is released.

In addition, user events other than touch sensing or in combination with touch sensing could be used to effectuate

an on-demand interface. These events can include, e.g.: mouse cursor position, mouse motion, mouse button click or release events, mouse wheel motion, location of a keyboard insertion point in a document, type or location of a currently selected object on a display screen, time-outs or time delays after the occurrence of a particular event. Moreover, other sensing technologies, apart from touch sensing, could be used to invoke on-demand action, such as, e.g.: galvanic skin response, non-contact proximity sensors, pressure sensors, events from touch/proximity sensors on a keyboard, data from a GPS (global positioning system) receiver (position of the user or location of a mobile computer), video data from a camera, and audio data from a microphone.

Moreover, conventional decision-theoretic approaches could be integrated with my inventive on-demand interface to produce additional or improved decisions as to how to combine multiple user events or produce reasoned decisions about what portions of a screen display are important and need to be hidden or displayed.

In addition, though I have described my invention in the context of use with a two-handed user interface, the on-demand aspect of the invention is equally applicable to a one-handed interface where touch is used to display and/or dismiss a Tool Glass or other display widget, either with controlled animation or not. However, use of a Tool Glass is considerably less efficient through a one-handed interface, where its display, dismissal and manipulation are all controlled through preferred hand interaction, than with a two-handed one.

Although an embodiment which incorporates the teachings of the present invention has been shown and described in detail herein, those skilled in the art can readily devise many other embodiments that still utilize these teachings.

I claim:

1. Apparatus for use with a computer system for implementing a graphical user interface, the system having a processor and a memory, connected to the processor, for storing computer executable instructions therein, and a display connected to the system, the apparatus comprising:

a first input device, connected to the system, for being manipulated by a dominant hand of the user, the first input device having a first touch sensor for generating a first output signal responsive to and indicative of whether the user is touching the device or not, and wherein the first input device is a touch sensitive mouse comprising,

a palm support; and

a palm sensor, as the first touch sensor and situated directly on the palm support, for determining whether a palm of the dominant hand is abutting against the palm support so as to generate the first output signal;

a graphical display, rendered on the display and produced by the system in response to the executable instructions, having a first display widget situated thereon; and

wherein the system, in response to the first output signal, fades the first display widget into or out of view on the graphical display based on whether the dominant hand of the user has then established or broken physical contact, respectively, with the first input device by correspondingly touching or releasing the first input device.

2. The apparatus in claim 1 wherein the processor in response to the executable instructions, controls fading of the first display widget in response to the first output signal

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such that upon initiation of the physical contact the first display widget fades into view from a first state having a first predefined opacity to a second state having a second predefined opacity and upon cessation of the physical contact the first display widget fades out from view from the second state back to the first state.

3. The apparatus in claim 2 wherein the first and second predefined opacities are approximately full transparency and full opacity, respectively.

4. The apparatus in claim 2 wherein the first display widget comprises an icon, a tool, hover text, a scroll bar, a window frame, a window decoration, a title bar, a floating tool palette, a modal dialog box, a non-modal dialog box, a list box, a combo box, a button, or a text entry area.

5. The apparatus in claim 2 wherein

the processor, in response to the executable instructions, initiates fading of the first display widget into view and out of view in response to corresponding transitions in the first output signal indicative of the dominant hand of the user establishing and breaking physical contact with the first input device; and wherein

the processor, in response to the executable instructions, fades the first display widget into and out of view over predefined first and second time intervals, respectively, and controls opacity of the first display widget while fading during each of the first and second intervals in response to predefined first and second functions, respectively.

6. The apparatus in claim 5 wherein either of the predefined first and second functions is a predefined non-linear function of opacity with respect to time.

7. The apparatus in claim 6 wherein the non-linear function provides slow-in/slow-out fading.

8. The apparatus in claim 5 wherein either of the first and second predefined functions is a linear function.

9. The apparatus in claim 5 wherein the first and second intervals are, in duration, approximately 0.5 seconds or less, and at least approximately 1 second, respectively.

10. The apparatus in claim 5 wherein the first and second predefined opacities are approximately full transparency and full opacity, respectively.

11. The apparatus in claim 5 wherein the first display widget comprises an icon, a tool, hover text, a scroll bar, a window frame, a window decoration, a title bar, a floating tool palette, a modal dialog box, a non-modal dialog box, a list box, a combo box, a button, or a text entry area.

12. The apparatus in claim 5 wherein the first function is different from the second function.

13. The apparatus in claim 5 further comprising graphics and output circuitry, connected to the processor and the display, capable of implementing alpha-transparent graphic operations wherein the processor, in response to the executable instructions, issues instructions to the circuitry so as to change an alpha-transparency value of the first display widget rendered on the display for successive display frames occurring during the first and second intervals and so implement a controlled animation sequence which, during the successive frames, fades the first display widget into or out of view, respectively.

14. The apparatus in claim 13 wherein the processor, in response to the executable instructions, varies coloration or luminance of the first display widget between successive ones of the frames during the animation sequence.

15. The apparatus in claim 14 wherein either of the first and second predefined functions is a linear function.

16. The apparatus in claim 14 wherein the first and second intervals are, in duration, approximately 0.5 seconds or less, and at least approximately 1 second, respectively.

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17. The apparatus in claim 14 wherein the first display widget comprises an icon, a tool, hover text, a scroll bar, a window frame, a window decoration, a title bar, a floating tool palette, a modal dialog box, a non-modal dialog box, a list box, a combo box, a button, or a text entry area.

18. The apparatus in claim 13 wherein either of the predefined first and second functions is a predefined non-linear function of opacity with respect to time.

19. The apparatus in claim 18 wherein the non-linear function provides slow-in/slow-out fading.

20. Apparatus for use with a computer system for implementing a graphical user interface, the system having a processor and a memory, connected to the processor, for storing computer executable instructions therein, and a display connected to the system, the apparatus comprising:

a first input device, connected to the system, for being manipulated by a corresponding hand of the user, the first input device having a first touch sensor for generating a first output signal responsive to and indicative of whether the user is touching the device or not;

a graphical display, rendered on the display and produced by the system in response to the executable instructions, having a first display widget situated thereon;

wherein the system, in response to the first output signal, fades the first display widget into or out of view on the graphical display based on whether the hand of the user has then established or broken physical contact, respectively, with the first input device by correspondingly touching or releasing the first input device;

wherein the processor in response to the executable instructions, controls fading of the first display widget in response to the first output signal such that upon initiation of the physical contact the first display widget fades into view from a first state having a first predefined opacity to a second state having a second predefined opacity and upon cessation of the physical contact the first display widget fades out from view from the second state back to the first state; and

wherein the processor, in response to the executable instructions, fades the first display widget into and out of view over predefined first and second time intervals, respectively, and controls opacity of the first display widget while fading during each of the first and second intervals in response to predefined first and second functions, respectively, the first function being different from the second function.

21. The apparatus in claim 20 wherein the processor, in response to the executable instructions, initiates fading of the first display widget into view and out of view in response to corresponding transitions in the first output signal indicative of the non-preferred hand of the user establishing and breaking physical contact with the first device.

22. The apparatus in claim 21 wherein the first and second predefined opacities are approximately full transparency and full opacity, respectively.

23. The apparatus in claim 21 further comprising graphics and output circuitry, connected to the processor and the display, capable of implementing alpha-transparent graphic operations wherein the processor, in response to the executable instructions, issues instructions to the circuitry so as to change an alpha-transparency value of the first display widget rendered on the display for successive display frames during the first and second intervals and so implement a controlled animation sequence which, during the successive frames, fades the first display widget into or out of view, respectively.

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24. The apparatus in claim 23 wherein the processor, in response to the executable instructions, varies coloration or luminance of the first display widget between successive ones of the frames during the animation sequence.

25. The apparatus in claim 24 wherein either of the first and second predefined functions is a linear function.

26. The apparatus in claim 24 wherein the first and second intervals are, in duration, approximately 0.5 seconds or less, and at least approximately 1 second, respectively.

27. The apparatus in claim 24 wherein the first and second predefined opacities are approximately full transparency and full opacity, respectively.

28. The apparatus in claim 24 wherein the first display widget comprises an icon, a tool, hover text, a scroll bar, a window frame, a window decoration, a title bar, a floating tool palette, a modal dialog box, a non-modal dialog box, a list box, a combo box, a button, or a text entry area.

29. The apparatus in claim 24 wherein the first input device is a touchpad, touch sensitive mouse, touch sensitive trackball or touch sensitive keyboard.

30. The apparatus in claim 23 wherein either of the predefined first and second functions is a predefined non-linear function of opacity with respect to time.

31. The apparatus in claim 30 wherein the non-linear function provides slow-in/slow-out fading.

32. The apparatus in claim 21, further comprising:

a second input device, wherein the first and second input devices are manipulated by preferred and non-preferred hands of the user, the second input device having a second touch sensor for generating a second output signal responsive to and indicative of the user touching the second input device or not; and

a Tool Glass appearing on the graphical display and produced by the system in response to the executable instructions; and

wherein the processor, in response to the second output signal, controls fading of the Tool Glass such that, when the non-preferred hand touches the second input device, the Tool Glass fades into view from a substantially invisible state having a third predefined opacity to a semi-transparent state having a fourth predefined opacity and, when the non-preferred hand releases the second input device, the Tool Glass fades out of view from the semi-transparent state back to the substantially invisible state.

33. The apparatus in claim 32 wherein each of the first and second touch sensors produces a one-bit output signal.

34. The apparatus in claim 32 wherein the second input device is a touchpad, touch sensitive mouse, touch sensitive trackball or other touch sensitive input pointing device.

35. The apparatus in claim 34 wherein the first input device is a touchpad, touch sensitive mouse, touch sensitive trackball or touch sensitive keyboard.

36. The apparatus in claim 34 wherein if both the Tool Glass and the first display widget are simultaneously being rendered on the display and the physical contact ceases between the preferred hand and the first input device, the processor, in response to the executable instructions and which specific widgets are then being displayed, an operation then occurring or a relative display prioritization among widgets that could be simultaneously displayed, does not fade the first display widget from view.

37. The apparatus in claim 34 wherein the processor, in response to the executable instructions, fades the Tool Glass into and out of view over predefined third and fourth time intervals, respectively, and controls opacity of the Tool Glass while fading during each of the third and fourth intervals in response to predefined third and fourth functions.

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38. The apparatus in claim 37 wherein the processor, in response to the executable instructions, initiates fading of the Tool Glass into view and out of view in response to corresponding transitions in the second output signal indicative of the non-preferred hand of the user establishing and breaking physical contact with the second input device.

39. The apparatus in claim 38 wherein either of the predefined third and fourth functions is a predefined non-linear function of opacity with respect to time.

40. The apparatus in claim 39 wherein the non-linear function provides slow-in/slow-out fading.

41. The apparatus in claim 38 wherein either of the third and fourth predefined functions is a linear function.

42. The apparatus in claim 38 wherein the third and fourth intervals are, in duration, approximately 0.5 seconds or less, and at least approximately 1 second, respectively.

43. The apparatus in claim 38 wherein the third and fourth predefined opacities are approximately 0α and at least approximately 0.7α , respectively, where 0α and 1α represent full transparency and full opacity, respectively.

44. The apparatus in claim 38 wherein the first display widget comprises an icon, a tool, hover text, a scroll bar, a window frame, a window decoration, a title bar, a floating tool palette, a modal dialog box, a non-modal dialog box, a list box, a combo box, a button, or a text entry area.

45. The apparatus in claim 38 wherein the first input device is a touchpad, touch sensitive mouse, touch sensitive trackball or touch sensitive keyboard.

46. The apparatus in claim 38 further comprising graphics and output circuitry, connected to the processor and the display, capable of implementing alpha-transparent graphic operations wherein the processor, in response to the executable instructions, issues instructions to the circuitry so as to change an alpha-transparency value of the Tool Glass rendered on the display for successive display frames occurring during the third and fourth intervals and so implement a controlled animation sequence which, during the successive frames, fades the Tool Glass into or out of view, respectively.

47. The apparatus in claim 46 wherein the processor, in response to the executable instructions, varies coloration or luminance of the Tool Glass between successive ones of the frames during the animation sequence.

48. The apparatus in claim 47 wherein either of the third and fourth predefined functions is a linear function.

49. The apparatus in claim 47 wherein the third and fourth intervals are, in duration, approximately 0.5 seconds or less, and at least approximately 1 second, respectively.

50. The apparatus in claim 47 wherein the third and fourth predefined opacities are approximately 0α and at least approximately 0.7α , respectively, where 0α and 1α represent full transparency and full opacity, respectively.

51. The apparatus in claim 47 wherein the first display widget comprises an icon, a tool, hover text, a scroll bar, a window frame, a window decoration, a title bar, a floating tool palette, a modal dialog box, a non-modal dialog box, a list box, a combo box, a button, or a text entry area.

52. The apparatus in claim 47 wherein the first input device is a touchpad, touch sensitive mouse, touch sensitive trackball or touch sensitive keyboard.

53. The apparatus in claim 46 wherein either of the predefined third and fourth functions is a predefined non-linear function of opacity with respect to time.

54. The apparatus in claim 53 wherein the non-linear function provides slow-in/slow-out fading.

55. The apparatus in claim 20 wherein either of the predefined first and second functions is a predefined non-linear function of opacity with respect to time.

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56. The apparatus in claim 55 wherein the non-linear function provides slow-in/slow-out fading.

57. The apparatus in claim 20 wherein either of the first and second predefined functions is a linear function.

58. The apparatus in claim 20, wherein the first and second intervals are, in duration, approximately 0.5 seconds or less, and at least approximately 1 second, respectively.

59. The apparatus in claim 20 wherein the first display widget comprises hover text or a text entry area.

60. The apparatus in claim 20 wherein the first input device is a touch sensitive keyboard.

61. A method for implementing a graphical user interface for use with a computer system, the system having a processor and a memory, connected to the processor, for storing computer executable instructions therein, and a display connected to the system, the method comprising the steps of:

manipulating a first input device, connected to the system, by a preferred hand of the user, the first input device having a first touch sensor for generating a first output signal responsive to and indicative of whether the user is touching the device or not;

rendering a graphical display, on the display and produced by the system in response to the executable instructions, having a first display widget situated thereon;

fading, in response to the first output signal, the first display widget into or out of view on the graphical display based on whether the hand of the user has then established or broken physical contact, respectively, with the first device by correspondingly touching or releasing the first device;

manipulating a second input device, by a non-preferred hand of the user, respectively, the second input device having a second touch sensor for generating a second output signal responsive to and indicative of the user touching the second input device or not;

rendering a Tool Glass on the graphical display and produced by the system in response to the executable instructions; and

in response to the second output signal, fading the Tool Glass such that, when the non-preferred hand touches the second input device, the Tool Glass fades into view from a substantially invisible state having a third predefined opacity to a semi-transparent state having a fourth predefined opacity and, when the non-preferred hand releases the second input device, fading the Tool Glass fades out of view from the semi-transparent state back to the substantially invisible state.

62. The method in claim 61 further comprising the step of controlling fading of the first display widget in response to the first output signal such that upon initiation of the physical contact the first display widget fades into view from a first state having a first predefined opacity to a second state having a second predefined opacity and upon cessation of the physical contact the first display widget fades out from view from the second state back to the first state.

63. The method in claim 62 wherein the first and second predefined opacities are approximately full transparency and full opacity, respectively.

64. The method in claim 62 further comprising the steps of:

fading the first display widget into and out of view over predefined first and second time intervals, respectively; and

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controlling opacity of the first display widget while fading during each of the first and second intervals in response to predefined first and second functions, respectively.

65. The method in claim 64 further comprising the step of initiating fading of the first display widget into view and out of view in response to corresponding transitions in the first output signal indicative of the non-preferred hand of the user establishing and breaking physical contact with the first device.

66. The method in claim 65 wherein either of the predefined first and second functions is a predefined non-linear function of opacity with respect to time.

67. The method in claim 66 wherein the non-linear function provides slow-in/slow-out fading.

68. The method in claim 65 wherein either of the first and second predefined functions is a linear function.

69. The method in claim 65 wherein the first and second intervals are, in duration, approximately 0.5 seconds or less, and at least approximately 1 second, respectively.

70. The method in claim 65 wherein the first and second predefined opacities are approximately full transparency and full opacity, respectively.

71. The method in claim 65 further comprising the step of changing an alpha-transparency value of the first display widget rendered on the display for successive display frames during the first and second intervals and so implement a controlled animation sequence which, during the successive frames, fades the first display widget into or out of view, respectively.

72. The method in claim 71 further comprising the step of varying coloration or luminance of the first display widget between successive ones of the frames during the animation sequence.

73. The method in claim 72 wherein either of the first and second predefined functions is a linear function.

74. The method in claim 72 wherein the first and second intervals are, in duration, approximately 0.5 seconds or less, and at least approximately 1 second, respectively.

75. The method in claim 72 wherein the first and second predefined opacities are approximately full transparency and full opacity, respectively.

76. The method in claim 71 wherein either of the predefined first and second functions is a predefined non-linear function of opacity with respect to time.

77. The method in claim 76 wherein the non-linear function provides slow-in/slow-out fading.

78. The method in claim 65, further comprising the step, if both the Tool Glass and the first display widget are simultaneously being rendered on the display and the physical contact ceases between the preferred hand and the first input device, of not fading the first display widget from view in response to which specific widgets are then being displayed, an operation then occurring or a relative display prioritization among widgets that could be simultaneously displayed.

79. The method in claim 65 further comprising the steps of fading the Tool Glass into and out of view over predefined third and fourth time intervals, respectively, and controlling opacity of the Tool Glass while fading during each of the third and fourth intervals in response to predefined third and fourth functions.

80. The method in claim 79 further comprising the step of initiating fading of the Tool Glass into view and out of view in response to corresponding transitions in the second output signal indicative of the non-preferred hand of the user establishing and breaking physical contact with the second input device.

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81. The method in claim 80 wherein either of the predefined third and fourth functions is a predefined non-linear function of opacity with respect to time.

82. The method in claim 81 wherein the non-linear function provides slow-in/slow-out fading.

83. The method in claim 80 wherein either of the third and fourth predefined functions is a linear function.

84. The method in claim 80 wherein the third and fourth intervals are, in duration, approximately 0.5 seconds or less, and at least approximately 1 second, respectively.

85. The method in claim 80 wherein the third and fourth predefined opacities are approximately 0α and at least approximately 0.7α , respectively, where 0α and 1α represent full transparency and full opacity, respectively.

86. The method in claim 80 further comprising the step of changing an alpha-transparency value of the Tool Glass rendered on the display for successive display frames occurring during the third and fourth intervals and so implement a controlled animation sequence which, during the successive frames, fades the Tool Glass into or out of view, respectively.

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87. The method in claim 86 further comprising the step of varying coloration or luminance of the Tool Glass between successive ones of the frames during the animation sequence.

88. The method in claim 87 wherein either of the third and fourth predefined functions is a linear function.

89. The method in claim 87 wherein the third and fourth intervals are, in duration, approximately 0.5 seconds or less, and at least approximately 1 second, respectively.

90. The method in claim 87 wherein the third and fourth predefined opacities are approximately 0α and at least approximately 0.7α , respectively, where 0α and 1α represent full transparency and full opacity, respectively.

91. The method in claim 86 wherein either of the predefined third and fourth functions is a predefined non-linear function of opacity with respect to time.

92. The method in claim 91 wherein the non-linear function provides slow-in/slow-out fading.

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60/5/48 (Item 48 from file: 350) [Links](#)

Derwent WPIX

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Attention performance test administration apparatus for diagnosis of educational disabilities, displays visual word targets and visual response targets sequentially to monitor response of tested patient

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Patent Family (1 patents, 1 countries)

Patent Number	Kind	Date	Application Number	Kind	Date	Update	Type
US 6053739	A	20000425	US 199614916	P	19960410	200031	B
			US 1997833861	A	19970410		

Priority Applications (no., kind, date): US 199614916 P 19960410; US 1997833861 A 19970410

Patent Details

Patent Number	Kind	Lan	Pgs	Draw	Filing Notes	
US 6053739	A	EN	28	26	Related to Provisional	US 199614916

Alerting Abstract US A

NOVELTY - The apparatus displays **visual** word targets such as name of a color, with color **different** from the name, for a specified period. On completion, the **visual** response targets, such as the color strips are displayed sequentially for specified periods and the responses of the **tested** patient are **monitored** and entered in the memory.

DESCRIPTION - The apparatus has an execution program loaded in its hard disk (38) with **different** code modules. The name of a color is **displayed** by a module in a **computer** color **monitor** (46), with a color **different** from name **displayed** for a specified period. **Multiple visual** response targets such as strips of colors are sequentially **displayed** for specified periods by the next module, after the completion of name display. The response of the user to the response targets through a hand operation unit (50) is **monitored** by the next module, during the sequential presentation. The process is repeated and the response of the **tested** patient are recorded in the hard disk for successive visual word targets, i.e. the names of the colors. Additional modules are also included in the program, to check the veracity of the responses and to store the indicium of correct responses in the memory. **INDEPENDENT CLAIMS** are also included for the following:

- A. computer software product for **the** test;
- B. method of administration **of** the attention performance test;
- C. computer readable medium with the **program**

USE - For diagnosis of educational disabilities, attention deficit diversions, etc, for students, **children**. Also for diagnosing reaction, physiological response of pancreas **over** a period of **time**.

ADVANTAGE - The program can be executed for diagnosis, simply using a personal computer (PC) or a laptop

computer. The brain's **attention span level** can be measured **physiologically** through a reaction **time response** with high level **vigilance**. The stress acting on **brain** can also be evaluated day to day.

DESCRIPTION OF DRAWINGS - The figure shows the schematic block diagram of test administering apparatus.

36 Hard disk

46 Color monitor

50 Operation unit

Title Terms /Index Terms/Additional Words: ATTENTION; PERFORMANCE; **TEST**; ADMINISTER; APPARATUS; **DIAGNOSE**; **EDUCATION**; DISPLAY; VISUAL; WORD; TARGET; RESPOND; SEQUENCE; **MONITOR**; PATIENT

Class Codes

International Patent Classification

IPC	Class Level	Scope	Position	Status	Version Date
G09B-019/00			Main		"Version 7"

US Classification, Issued: 434236000, 434169000, 434258000, 434362000

File Segment: EngPI; EPI;

DWPI Class: S05; T01; P85

Manual Codes (EPI/S-X): **S05-D01F**; **T01-J06A1**; **T01-S03**



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United States Patent [19]

Stewart et al.

[11] **Patent Number:** 6,053,739[45] **Date of Patent:** *Apr. 25, 2000[54] **MEASUREMENT OF ATTENTION SPAN AND ATTENTION DEFICITS**[76] **Inventors:** Donald B. Stewart, 531 E. Wilson, Lombard, Ill. 60148; Thomas D. Sullivan, 6 Hunt Club La., Oakbrook, Ill. 60521[*] **Notice:** This patent issued on a continued prosecution application filed under 37 CFR 1.53(d), and is subject to the twenty year patent term provisions of 35 U.S.C. 154(a)(2).[21] **Appl. No.:** 08/833,861[22] **Filed:** Apr. 10, 1997**Related U.S. Application Data**

[60] Provisional application No. 60/014,916, Apr. 10, 1996.

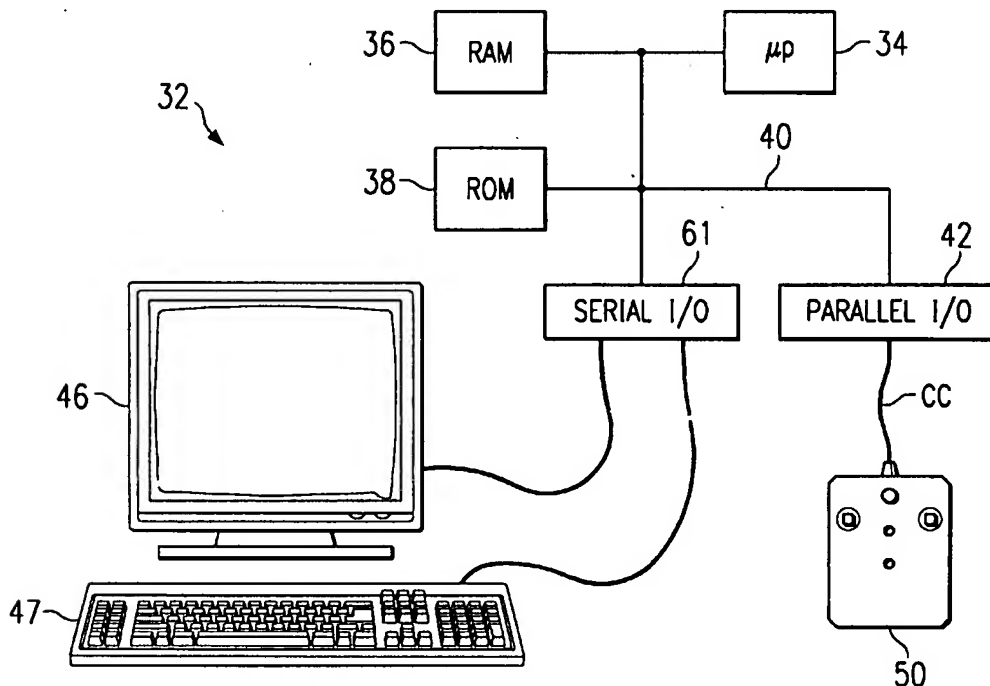
[51] **Int. Cl.⁷** G09B 19/00[52] **U.S. Cl.** 434/236; 434/169; 434/258; 434/362[58] **Field of Search** 434/169, 258, 434/236, 362, 326[56] **References Cited****U.S. PATENT DOCUMENTS**

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Primary Examiner—Valencia Martin-Wallace*Attorney, Agent, or Firm*—Jefferson Perkins Foley & Lardner[57] **ABSTRACT**

An attention performance test uses a visual display, a test subject input device, a memory and a programmed processor coupled to each of the above to administer a test to a test subject. A test target, which for example can be a word colored in a first color but meaning another color, is attempted to be matched by the test subject to one of a series of sequentially presented visual response targets. In one embodiment, a nonvisual test stimulus is also provided to the test subject, the test subject having previously been instructed to respond to the nonvisual test stimulus (such as a beep) in a particular way. The test also measures the response latency of the test subject, i.e., whether the test subject has assumed a correct position for entering a response. The responses from the test subject are recorded and may be compared with data derived from a test subject database in assessing whether an attention deficit disorder exists.

28 Claims, 15 Drawing Sheets

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screen. The technician informs the patient that the "beep" sound may come with a visual word target on the top half of the screen, or with no word, and they are to push the LRM buttons RLS, LLS whenever there is a "beep" sound, no matter what the patient sees on the top half of the screen.

17. The technician programs the first target from the "tutorial program" and observes if the patient can react correctly to the target stimuli and the target responses. The technician may "coach" the patient at the beginning as the technician advances the targets. The patient should be able to react correctly by himself or herself after 2-10 targets.

18. The technician enters the "trial program" of the tutorial screen (not shown) and select the "auditory alone" test type at 148 (FIG. 13). The technician informs the patient that the technician is going to let the patients try to perform the "beep" sound part of the test alone without the visual targets and see if the patient can respond and react without any help or assistance for about two minutes. The technician proceeds to run the auditory test.

19. Next, the technician enters the "trial program" and selects a "Both" test type at 148 (FIG. 13), which generates both visual and auditory stimuli. The technician informs the patient that the technician is going to let the patient try to perform the test with both the sound beeps and the visual word/color targets together by himself or herself without any "coaching" or help for about two minutes. This is a "practice" run to see if they understand the test. The technician proceeds to run the program and observes the patient's responses. The technician or examiner should be still, quiet and slightly behind the patient and slightly outside the patient's visual field.

20. The technician computes the trial results from items 18 and 19 using the analysis module (FIG. 26). If the patient scores 70% or better on the trials, the patient can proceed to the finalized test program. If the patient's scores are below 70% the technician repeats another two minute trial run and reviews with the patient the general instructions and previous mistakes the patient may have made on the first trial run.

21. The technician enters the "test program" at 124 (FIG. 11) and selects "Both" (at 148 in FIG. 13) and the duration of the test desired at 152 (6, 12, 18 minutes). The technician informs the patient that the technician is now going to run the test which will last a longer time, mentioning the specific time duration. The patient is to try to do the best he or she can and not to get upset or angry if he or she makes an error or mistake. The technician tells the patient that it is normal and common to miss a few targets or a make a few mistakes, and encourages the patient to concentrate on what they are doing and pay equal attention to both the word/color matches and the "beeps". The technician makes sure that the patient understands that the patient is to push the LRM 50 as soon and as fast as he or she can when he or she see or hear the appropriate target response. The technician encourages the patient to be thinking of what he or she should be doing at all times during the test.

22. When running the test program, the examiner should remain quiet, still and slightly out of the visual field of the patient.

23. After the test is completed, the examiner compliments the patient on his or her performance. The examiner

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enters the "analysis" module (FIG. 26) and types the patient's code to retrieve the log result data. The examiner then prints data analysis for the file and for review.

In summary, the present invention provides an automated and objectively uniform test method in which the test subject is asked to match one of a series visual response targets to an initially presented visual test target. In a preferred embodiment, the initial test target is a word presented in a particular hue but having a meaning not necessarily associated with the hue. The test subject is then asked to match colors of one of a series of sequentially presented visual response targets to the color of the test target. Preferably a nonvisual test subject stimulus, for example an auditory target, is also presented during selected ones of these sequences as a further distraction. Finally, the present invention preferably includes a method of measuring the response latency of the test subject during the administration of the test.

While certain embodiments of the invention have been described in the above detailed description and illustrated in the appended drawings, the invention is not limited thereto but only by the scope and spirit of the appended claims.

What is claimed is:

1. Apparatus for administering an attention performance test, comprising:

storage means for storing a plurality of responses by a test subject to an attention performance test;

a computing device having a memory;

a color display coupled to said computing device for displaying a plurality of colored visual word targets and a plurality of colored visual response targets in response to said computing device;

a test subject input device coupled to said processor to communicate a test subject response to said processor; and

a computer program, for execution by the computing device, for administering an attention performance test, said computer program including:

first means for presenting for a predetermined period of time a first predetermined visual word target on said color display to the test subject, a color of the word target being predetermined independently of the meaning of the word target, the word target being a word for a predetermined color, at least some of the meanings of the word targets respectively denoting a color other than the color in which the word target is displayed;

second means for sequentially presenting, after the first means has presented the predetermined visual word target, for predetermined periods of time, a plurality of predetermined visual response targets on the display, at least one of said visual response targets having a color which matches the color of the last presented visual word target;

third means for monitoring, during the sequential presentation by the second means of the predetermined visual response targets, the test subject input device;

fourth means for recording on said memory means, during the sequential presentation by the second means of the predetermined visual word targets, any response input by the test subject, said first, second, third and fourth means, for each of a plurality of next visual word targets, respectively presenting the next visual word target, sequentially presenting a plurality of visual response targets, monitoring the test input device and recording responses; and

fifth means for outputting at least to the storage means the recorded responses to the visual response targets.

2. The apparatus of claim 1, wherein said storage means is a hard disk.

3. The apparatus of claim 1, wherein said computer program includes sixth means for determining whether the response of the subject was correct.

4. The apparatus of claim 3, wherein said computer program includes seventh means for storing an indicium of a correct response.

5. A computer software product that includes a medium readable by a computer, the medium having stored thereon:

first means for causing a computer to present, on a color display connected to the computer, for a predetermined period of time, a first predetermined visual word target on a color display to a test subject, a color of the word target being predetermined independently of the meaning of the word target, the word target being a word for a predetermined color, at least some of the meanings of the word targets respectively denoting a color other than the colors in which the respective word targets are displayed;

second means for causing the computer to sequentially present, after the computer has presented the first predetermined visual word target, for predetermined periods of time, a plurality of predetermined visual response targets on the display, at least one of said visual response targets having a color which matches the color of the last presented visual word target;

third means for causing the computer to monitor, during the time that the computer is sequentially presenting visual response targets, a test subject input device coupled to the computer;

fourth means for causing the computer to record on a memory of the computer, during the time that the computer is sequentially presenting visual response target, any response input by the test subject, the first, second, third and fourth means, for each of a plurality of next visual word targets, respectively causing the computer to present a visual word target, to sequentially present visual response targets, to monitor the test subject input device and to record any response by the subject; and

fifth means for causing the computer to output at least to the memory the recorded responses to the visual response targets.

6. A method for administering an attention performance test, comprising the steps of:

(a) loading into a processor instructions from a pre-recorded computer program, the processor controlling a visual color display, a test subject input device and a memory all coupled to the processor to administer the test to the subject;

(b) presenting for a predetermined period of time a first predetermined visual word target on the color display to the test subject, a color of the word target being predetermined independently of the meaning of the word target, the word target being a word for a predetermined color, at least some of the meanings of the word targets respectively denoting colors other than the colors in which the respective word targets are displayed;

(c) after step (b), sequentially presenting, for predetermined periods of time, a plurality of predetermined visual response targets on the display, at least one of said visual response targets having a color which matches the color of the last presented visual word target;

(d) during step (c), using the processor to monitor the test subject input device;

(e) during step (d), using the memory to record any response input by the test subject;

(f) repeating steps (b)–(e) for each of a plurality of next visual word targets; and

(g) outputting at least to the memory the recorded responses to the visual response targets.

7. Apparatus for administering an attention performance test, comprising:

memory means for storing an attention performance test computer program and a plurality of responses to the test of a test subject;

a processor coupled to said memory means for retrieving instructions therefrom, said processor operating in response to said instructions;

a display coupled to said processor for displaying a plurality of visual test targets and a plurality of visual response targets in response to said processor; and

an input device controlled by a test subject, said input device coupled to said processor and communicating a response to said processor from the test subject, at least one sensor on the input device detecting whether the subject physically is in a position to select a response target in response to the visual test target;

said processor, said memory means, said display and said input device administering an attention performance test having each of the following steps:

(a) presenting for a predetermined period of time a first predetermined visual test target on said display to the test subject;

(b) after step (a), sequentially presenting, for predetermined periods of time, a plurality of predetermined visual response targets on the display;

(c) during step (b), using the processor to monitor the test subject input device;

(d) during step (c), recording on said memory means any response input by the test subject and whether the subject is in the correct position for responding;

(e) repeating steps (a)–(d) for each of a plurality of next visual word targets; and

(f) outputting at least to the memory means the recorded responses to the visual response targets and data concerning whether the test subject was in position to respond.

8. The apparatus of claim 7, wherein said memory means is a hard disk.

9. The apparatus of claim 7, wherein said processor, said input device and said memory means are responsive to the computer program to determine whether the response of the subject was correct.

10. The apparatus of claim 9, wherein said processor and said memory means are responsive to said computer program to store an indicium of a correct response.

11. The apparatus of claim 7, wherein said test subject input device is adapted to be held by the test subject, said input device including means to detect whether the hands of the test subject are in the correct position for inputting a response.

12. A computer-readable medium on which is prerecorded a computer program which, in conjunction with a processor, a memory coupled to the processor, a test-subject-controlled input device coupled to the processor and a display coupled to the processor, administers an attention performance test to the test subject, the computer program including:

first program code means for causing the processor to present, for a predetermined period of time, a first predetermined visual test target on the display to the test subject;

second program code means for causing the processor to sequentially present, for predetermined periods of time after the processor presents the first predetermined visual test target, a plurality of predetermined visual response targets on the display, at least one of said visual response targets being a correct choice;

third program code means for causing the processor to monitor the test subject input device during the sequential presentation by the processor of the visual response targets to detect any response by the test subject;

fourth program code means for causing the processor and the test subject input device to monitor whether the test subject is in the correct position for responding during the sequential presentation by the processor of the visual response targets;

fifth program code means for causing the processor to record, during the sequential presentation by the processor of the visual response targets, on said memory any response input by the test subject and to record the times when the test subject is in a correct position for response, the first, second, third, fourth and fifth program code means causing the processor, for each of a plurality of next visual word targets, to respectively present a visual word target, sequentially present a plurality of visual response targets, monitor whether the test subject responds, monitor whether the test subject is in the correct position, and record any response by the test subject and the times during which the test subject is in the correct position for response; and

sixth program code means for causing the processor to output, at least to the memory, the recorded responses to the visual response targets and the times during which the test subject was in a correct position to respond.

13. A method for administering an attention performance test, comprising the steps of:

- (a) providing to a processor a set of instructions of a computer program, the processor controlling a visual display, a test subject input device and a memory all coupled to the processor, the processor administering the test to the subject according to the instructions;
- (b) presenting for a predetermined period of time a first predetermined visual test target on the display to the test subject;
- (c) after step (b), sequentially presenting, for predetermined periods of time, a plurality of predetermined visual response targets on the display, at least one of said visual response targets being a correct choice;
- (d) during step (c), using the processor to monitor the test subject input device to determine if the test subject has selected one of the presented visual response targets;
- (e) during step (c), using the processor and the test subject input device to monitor whether the test subject is in a correct position to respond;
- (f) during steps (d) and (e), using the memory to record any response input by the test subject and times during which the test subject was in the correct position to respond;
- (g) repeating steps (b)-(f) for each of a plurality of next visual word targets; and
- (h) outputting at least to the memory the recorded responses to the visual response targets and the times during which the test subject was in the correct position to respond.

14. Apparatus for administering an attention performance test, comprising:

memory means on which is stored an attention performance test computer program and for storing a plurality of responses to the test of a test subject;

a processor coupled to the memory means for retrieving instructions therefrom, said processor operating in response to said instructions;

a display coupled to the processor for displaying a plurality of visual stimulus targets and a plurality of visual response targets in response to the processor, each of the visual stimulus targets having first and second attributes perceptible to the test subject, at least some of the visual stimulus targets having first attributes which are contradictory to their respective second attributes, the visual response targets having at least first attributes perceptible to the test subject; and

an input device controlled by the test subject, said input device coupled to the processor and communicating a response of the test subject to the processor;

the computer program including:

first means for causing the processor to present, for a predetermined period of time, a first predetermined one of said visual stimulus targets on the display to the test subject;

second means for causing the processor to sequentially present, for predetermined periods of time after the processor presents the first predetermined one of said visual stimulus targets, a plurality of predetermined visual response targets on the display, at least one of said visual response targets having a first attribute which matches the first attribute of the last presented visual stimulus target;

third means for causing the processor to monitor the test subject input device during the presentation of the visual response targets;

fourth means for causing the processor to record on the memory means any response input by the test subject during the presentation of the visual response targets, the first, second third and fourth means, for each of a plurality of next ones of said visual stimulus targets, respectively causing the processor to present one of said visual stimulus targets, to present visual response targets, to monitor the test subject input device and to record any response of the test subject on, the memory means; and

fifth means for causing the processor to output, at least to the memory means, the recorded responses to the visual response targets.

15. The apparatus of claim 14, wherein the memory means is a hard disk.

16. The apparatus of claim 14, wherein said computer program includes sixth means for causing the processor to determine whether the response of the subject was correct.

17. The apparatus of claim 16, wherein said computer program includes sixth means for causing the processor to store an indicium of a correct response on the memory means.

18. The apparatus of claim 14, wherein the display is a color display, the second attribute of each predetermined visual stimulus target being a word for a predetermined color, the first attribute of each predetermined visual stimulus target being the color in which the word is displayed.

19. The apparatus of claim 14, wherein each visual response target has a second attribute perceptible to the test

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subject, at least some of the visual response targets having second attributes which are contradictory to the respective first attributes thereof.

20. The apparatus of claim 19, wherein the display is a color display, the first attribute of each visual response target being a word for a predetermined color, the second attribute of each visual response target being the actual color in which the word is displayed.

21. A medium on which is prerecorded a computer program which, in conjunction with a processor, a memory coupled to the processor, a test-subject-controlled input device coupled to the processor and a display coupled to the processor, administers an attention performance test to the test subject, the computer program including:

first means for causing the processor to present, for a predetermined period of time, a first of a plurality of predetermined visual stimulus targets on the display to the test subject, each of the visual stimulus targets having individually predetermined first and second attributes perceptible to the test subject, at least some of the visual stimulus targets having second attributes which are contradictory to their respective first attributes;

second means for causing the processor to sequentially present, after the processor presents the first predetermined visual stimulus target, for predetermined periods of time, a plurality of predetermined visual response targets on the display, each of the visual response targets having at least a first attribute perceptible to the test subject, at least one of said visual response targets having a first attribute which matches the first attribute of the last presented visual stimulus target;

third means for causing the processor to monitor the test subject input device during the presentation of the visual response targets;

fourth means for causing the processor to record, during the presentation of the visual response targets, on said memory any response input by the test subject, the first, second, third and fourth means respectively causing the processor, for each of a plurality of next visual stimulus targets, to present a visual stimulus target, to sequentially present a plurality of visual response targets, to monitor the test subject input device and to record any response by the test subject; and

fifth means for causing the processor to output at least to the memory the recorded responses to the visual response targets.

22. The medium of claim 21, wherein the display is a color display, the second attribute of each visual stimulus target being a word denoting a color, the first attribute of each visual stimulus target being a color in which the word is displayed.

23. The medium of claim 21, wherein each visual response target has a second attribute perceptible to the test subject, the second attributes of at least some of the visual

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response targets being contradictory to the respective first attributes of the visual response targets.

24. The medium of claim 23, wherein the display is a color display, the first attribute of each visual response target being a word for a color, the second attribute of each visual response target being the color in which the word is displayed.

25. A method for administering an attention performance test, comprising the steps of:

(a) loading into a processor instructions from a prerecorded computer program, the processor controlling a visual display, a test subject input device and a memory all coupled to the processor to administer the test to the subject;

(b) presenting for a predetermined period of time a first one of a plurality of predetermined visual stimulus targets on the display to the test subject, each visual stimulus target having first and second attributes perceptible to the test subject, at least some of the visual stimulus targets having first attributes which are contradictory to their respective second attributes;

(c) after step (b), sequentially presenting, for predetermined periods of time, a plurality of predetermined visual response targets on the display, each visual response target having a first attribute which is perceptible to the test subject, at least one of said visual response targets having a first attribute which matches the first attribute of the last presented visual stimulus target;

(d) during step (c), using the processor to monitor the test subject input device;

(e) during step (d), using the memory to record any response input by the test subject;

(f) repeating steps (b)–(e) for each of a plurality of next visual stimulus targets; and

(g) outputting at least to the memory the recorded responses to the visual response targets.

26. The method of claim 25, wherein the visual display is a color display, the second attribute of each predetermined visual stimulus target being a word for a predetermined color, the first attribute of each predetermined visual stimulus target being the color in which the word is displayed.

27. The method of claim 25, wherein each visual response target has a second attribute perceptible by the test subject, at least some of the visual response targets having second attributes which are contradictory to the respective first attributes thereof.

28. The method of claim 27, wherein the display is a color display, the first attribute of each visual response target being a word for a predetermined color, the second attribute of each visual response target being the actual color in which the word is displayed.

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60/5/67 (Item 67 from file: 350) [Links](#)

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0008366049 *Drawing available*

WPI Acc no: 1997-480432/199744

XRPX Acc No: N1997-400656

Display device attention manager - detects idle period of non-interaction with computer to generate information display

Patent Assignee: AGULNICK T A (AGUL-I); BHADKAMKAR N A (BHAD-I); DAVIS M E (DAVI-I); FREIBERGER P A (FREI-I); GOODHEAD G N (GOOD-I); INTERVAL RES (INTE-N); INTERVAL RES CORP (INTE-N); LEVIN G (LEVI-I); PIERNOT P P (PIER-I); REED D P (REED-I); ROSENTHAL S N (ROSE-I)

Inventor: AGULNICK T A; AQLNICK T A; BHADKAMKAR N A; DAVIS M E; FREIBERGER P A; GOODHEAD G N; LEVIN G; PIERNOT P P; REED D P; ROSENTHAL S N

Patent Family (12 patents, 73 countries)

Patent Number	Kind	Date	Application Number	Kind	Date	Update	Type
WO 1997035296	A1	19970925	WO 1997US4610	A	19970321	199744	B
AU 199723405	A	19971010	AU 199723405	A	19970321	199806	E
EP 888604	A1	19990107	EP 1997916153	A	19970321	199906	E
			WO 1997US4610	A	19970321		
US 6034652	A	20000307	US 1996620641	A	19960322	200019	E
JP 2000507365	W	20000613	JP 1997533741	A	19970321	200035	E
			WO 1997US4610	A	19970321		
KR 2000064755	A	20001106	WO 1997US4610	A	19970321	200128	E
			KR 1998707518	A	19980922		
US 20020003506	A1	20020110	US 1996620641	A	19960322	200208	E
			US 1999372399	A	19990810		
EP 888604	B1	20021211	EP 1997916153	A	19970321	200282	E
			WO 1997US4610	A	19970321		
US 20020180697	A1	20021205	US 1996620641	A	19960322	200301	E
			US 1999372399	A	19990810		
			US 2000528803	A	20000320		
			US 2002152241	A	20020520		
DE 69717796	E	20030123	DE 69717796	A	19970321	200315	E
			EP 1997916153	A	19970321		
			WO 1997US4610	A	19970321		
US 6750880	B2	20040615	US 1996620641	A	19960322	200439	E
			US 1999372399	A	19990810		
			US 2000528803	A	20000320		
			US 2002152241	A	20020520		
US 6788314	B1	20040907	US 1996620641	A	19960322	200459	E
			US 1999372399	A	19990810		
			US 2000528803	A	20000320		

Priority Applications (no., kind, date): US 2002152241 A 20020520; US 2000528803 A 20000320; US 1999372399 A 19990810; US 1996620641 A 19960322

Patent Details

Patent Number	Kind	Lan	Pgs	Draw	Filing Notes	
WO 1997035296	A1	EN	80	6		
National Designated States,Original	AL AM AT AU AZ BA BB BG BR BY CA CH CN CU CZ DE DK EE ES FI GB GE GH HU IL IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK TJ TM TR TT UA UG UZ VN YU					
Regional Designated States,Original	AT BE CH DE DK EA ES FI FR GB GH GR IE IT KE LS LU MC MW NL OA PT SD SE SZ UG					
AU 199723405	A	EN			Based on OPI patent	WO 1997035296
EP 888604	A1	EN			PCT Application	WO 1997US4610
					Based on OPI patent	WO 1997035296
Regional Designated States,Original	DE FR GB					
JP 2000507365	W	JA	76		PCT Application	WO 1997US4610
					Based on OPI patent	WO 1997035296
KR 2000064755	A	KO		10	PCT Application	WO 1997US4610
US 20020003506	A1	EN			Continuation of application	US 1996620641
					Continuation of patent	US 6034652
EP 888604	B1	EN			PCT Application	WO 1997US4610
					Based on OPI patent	WO 1997035296
Regional Designated States,Original	DE FR GB					
US 20020180697	A1	EN			Continuation of application	US 1996620641
					Continuation of application	US 1999372399
					Continuation of application	US 2000528803
					Continuation of patent	US 6034652
DE 69717796	E	DE			Application	EP 1997916153
					PCT Application	WO 1997US4610
					Based on OPI patent	EP 888604
					Based on OPI patent	WO 1997035296
US 6750880	B2	EN			Continuation of application	US 1996620641
					Continuation of application	US 1999372399
					Continuation of application	US 2000528803
					Continuation of patent	US 6034652

US 6788314	B1	EN			Continuation of application	US 1996620641
					Continuation of application	US 1999372399
					Continuation of patent	US 6034652

Alerting Abstract WO A1

Attention manager makes use of the unused capacity of a display device using an idle period when the user is not interacting with the **computer**, detected by e.g. activation of a screen saver.

If an idle period is detected (102), a **determination** is made as to whether there are any sets of content data available for use in generating a display. If none are available, the primary user interaction continues, with continuous checking for an idle period. If at least one set of content data is available those sets are scheduled (104) for display. The content data is displayed (105) and then a **determination** is made (106) as to whether operation of the attention manager has been terminated through e.g. pressing a key or mouse button.

USE/ADVANTAGE - Attention manager is for engaging peripheral attention of person near e.g. **computer monitor**, television, audio speakers. Makes use of unused capacity of display during inactive periods

Title Terms /Index Terms/Additional Words: DISPLAY; DEVICE; ATTENTION; MANAGE; DETECT; IDLE; PERIOD; NON; INTERACT; **COMPUTER**; GENERATE; INFORMATION

Class Codes

International Patent Classification

IPC	Class Level	Scope	Position	Status	Version Date
G09F-027/00; G09G-005/00; G09G-005/12			Main		"Version 7"
G06F-013/00; G06F-015/16; G09G-005/14			Secondary		"Version 7"

US Classification, Issued: 345002100, 345156000, 345002000, 345115000, 709218000, 345730000, 709218000 , 345730000, 709218000

File Segment: EngPI; EPI;

DWPI Class: T01; W05; P85

Manual Codes (EPI/S-X): **T01-J12**; W05-A04; W05-E03

60/5/52 (Item 52 from file: 350) [Links](#)

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0009774336 *Drawing available*

WPI Acc no: 2000-061993/200005

Related WPI Acc No: 2002-607751

XRPX Acc No: N2000-048575

Computer aided learning method for teaching subjects to students

Patent Assignee: HO C F (HOCF-I); TONG P P (TONG-I)

Inventor: **HO C F; TONG P P**

THIS APPLICATION

Patent Family (5 patents, 73 countries)

Patent Number	Kind	Date	Application Number	Kind	Date	Update	Type
WO 1999054857	A1	19991028	WO 1998US7955	A	19980420	200005	B
US 5944530	A	19990831	US 1996689678	A	19960813	200005	NCE
AU 199871401	A	19991108	AU 199871401	A	19980420	200014	E
			WO 1998US7955	A	19980420		
US 6699043	B2	20040302	US 1996689678	A	19960813	200417	NCE
			US 1999385795	A	19990830		
			US 200250578	A	20020114		
US 20040137414	A1	20040715	US 1996689678	A	19960813	200447	NCE
			US 1999385795	A	19990830		
			US 200250578	A	20020114		
			US 2003694706	A	20031028		

Priority Applications (no., kind, date): US 2003694706 A 20031028; US 200250578 A 20020114; US 1996689678 A 19960813; WO 1998US7955 A 19980420

Patent Details

Patent Number	Kind	Lan	Pgs	Draw	Filing Notes	
WO 1999054857	A1	EN	34	5		
National Designated States,Original	AL AM AT AU AZ BB BG BR BY CA CH CN CZ DE DK EE ES FI GB GE HU IL IS JP KE KG KP KR KZ LK LR LS LT LU LV MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK TJ TM TR TT UA UG UZ VN					
Regional Designated States,Original	AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW NL OA PT SD SE SZ UG ZW					
US 5944530	A	EN	16			
AU 199871401	A	EN			PCT Application	WO 1998US7955
					Based on OPI patent	WO 1999054857
US 6699043	B2	EN			Continuation of application	US 1996689678

					Continuation of application	US 1999385795
					Continuation of patent	US 5944530
US 20040137414	A1	EN			Continuation of application	US 1996689678
					Continuation of application	US 1999385795
					Continuation of application	US 200250578
					Continuation of patent	US 5944530
					Continuation of patent	US 6699043

Alerting Abstract WO A1

NOVELTY - Study materials are selected from a memory (108) and then presented to **student** through presenter (106). A nonintrusive sensor (110) **monitors students** concentration, relative behavior from facial expression periodically. The output of sensor is **analyzed** based on a set of rules and the **concentration level** is indicated based on **analysis**.

DESCRIPTION - Based on the **analysis** result, the **students** concentration loss is prevented by asking questions to **students** unexpectedly.

USE - For **teaching** subjects to **students** according to their **concentration level** through **computer**.

ADVANTAGE - Ensures concentration of **students** on study materials by providing **timely** break and presenting questions unexpectedly to **students**. **Monitors students** concentration without any intrusion on **teaching** and provides correct indication on **concentration level**.

DESCRIPTION OF DRAWINGS - The figure shows the block diagram of **computer** aided **learning** system.

106 Center

108 Memory

110 Nonintrusive sensor

Title Terms /Index Terms/Additional Words: COMPUTER; AID; LEARNING; METHOD; TEACH; SUBJECT; STUDENT

Class Codes

International Patent Classification

IPC	Class Level	Scope	Position	Status	Version Date
G09B-019/00; G09B-007/00			Main		"Version 7"
G09B-003/00; G09B-005/00			Secondary		"Version 7"

US Classification, Issued: 434236000, 434236000, 434307000, 434322000, 434362000, 434236000, 434307R00 , 434323000, 434362000

File Segment: EngPI; EPI;

DWPI Class: S05; T01; T04; W04; P85

Manual Codes (EPI/S-X): S05-D01C5A; T01-J10A; T01-J10B2; T01-P01; T04-D07C; W04-W05A

60/5/16 (Item 16 from file: 350) [Links](#)

Derwent WPIX

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0012754567 *Drawing available*

WPI Acc no: 2002-607751/200265

Related WPI Acc No: 2000-061993

XRPX Acc No: N2002-481312

Computer-aided-educational method for school, involves analyzing monitored results based on rules to provide indication on student's concentration sensitive behavior

Patent Assignee: HO C F (HOCF-I); TONG P P (TONG-I)

Inventor: **HO C F; TONG P P**

SAME APPLICATION

Patent Family (1 patents, 1 countries)

Patent Number	Kind	Date	Application Number	Kind	Date	Update	Type
US 20020086272	A1	20020704	US 1999385795	A	19990830	200265	B
			US 200250578	A	20020114		

Priority Applications (no., kind, date): US 1999385795 A 19990830; US 200250578 A 20020114

Patent Details

Patent Number	Kind	Lan	Pgs	Draw	Filing Notes	
US 20020086272	A1	EN	16	5	Continuation of application	US 1999385795

Alerting Abstract US A1

NOVELTY - The study materials on a subject are presented to a **student** through a presenter. The **student's** concentration-sensitive behavior is automatically **monitored** through a sensor when the **student** is studying the material. The **monitored** result is **analyzed** based on the rules and an indication is provided on the **student's concentration level**.

DESCRIPTION - An **INDEPENDENT CLAIM** is included for **computer-aided educational system**.

USE - For considering **student's concentration level** in **teaching the students** through **computer** at home and schools.

ADVANTAGE - The sensor automatically **monitors** more than once, the **students** concentration-sensitive behavior while the **student** is working on the study material thereby, increases the accuracy in **determining the student's concentration level**. The presenter can change the presenting style accordingly such as by reducing the speed of presentation through increasing the line spacing of the text/size of the image.

DESCRIPTION OF DRAWINGS - The figure shows the flowchart illustrating the process of **computer-aided educational system**.

Title Terms /Index Terms/Additional Words: **COMPUTER; AID; EDUCATION; METHOD; SCHOOL; MONITOR; RESULT; BASED; RULE; INDICATE; STUDENT; CONCENTRATE; SENSITIVE; BEHAVE**

Class Codes

International Patent Classification

IPC	Class Level	Scope	Position	Status	Version Date
G09B-019/00			Main		"Version 7"

US Classification, Issued: 434236000

File Segment: EngPI; EPI;

DWPI Class: T01; W04; P85

Manual Codes (EPI/S-X): T01-J30A; W04-W07C

60/5/49 (Item 49 from file: 350) [Links](#)
 Derwent WPIX
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SAME
 APPLICANTS

0010012146 *Drawing available*
 WPI Acc no: 2000-316247/200027
 Related WPI Acc No: 2001-225588
 XRPX Acc No: N2000-237285

Computer aided group learning system e.g. for group of users working on subject, has controller configured to set duration of time users to communicate so as to allow them to work on materials on subject

Patent Assignee: FAI H C (FAIH-I); HO C F (HOCF-I); TONG P P (TONG-I)

Inventor: FAI H C; HO C F; TONG P P

Patent Family (2 patents, 1 countries)

Patent Number	Kind	Date	Application Number	Kind	Date	Update	Type
US 6029043	A	20000222	US 199815653	A	19980129	200027	B
US RE38432	E	20040224	US 1990474278	A	19901229	200415	E
			US 199815653	A	19980129		
			US 2002264552	A	20021006		

Priority Applications (no., kind, date): US 2002264552 A 20021006; US 1990474278 A 19901229; US 199815653 A 19980129

Patent Details

Patent Number	Kind	Lan	Pgs	Draw	Filing Notes	
US 6029043	A	EN	62	10		
US RE38432	E	EN			Original reissued application	US 1990474278
					Continuation of application	US 199815653
					Continuation of patent	US 6029043
					Reissue of patent	US 6160987

Alerting Abstract US A

NOVELTY - The system has a controller configured to set a duration of time users to communicate so as to allow them to work on materials on the subject. A dialogue session for users is started to communicate in an area related to the subject. The dialogue session is stopped approximately at or before the end of the duration of time.

DESCRIPTION - A **monitoring** apparatus configured to **monitor** user's input to the system during the dialogue session so as to have the **monitored** input available for **analysis**. Based on the **analysis**, the controller guides user back to the subject in the dialogue session when one or more users have been **distracted** from the subject for a duration of time, so that the dialogue session provides an interactive environment to help the users **learn**. An **INDEPENDENT CLAIM** is included for a **computer aided learning** method.

USE - For group of users working on subject.

ADVANTAGE - **Monitors** and **analyses** users' inputs such as when they are interacting.

DESCRIPTION OF DRAWINGS - The figure shows a physical implementation for an embodiment of the invention.

Title Terms /Index Terms/Additional Words: **COMPUTER**; AID; GROUP; **LEARNING** ; SYSTEM; USER; WORK; SUBJECT; CONTROL; CONFIGURATION; SET; DURATION; TIME; COMMUNICATE; SO; ALLOW; MATERIAL

Class Codes

International Patent Classification

IPC	Class Level	Scope	Position	Status	Version Date
G09B-003/00			Main		"Version 7"

US Classification, Issued: 434350000, 434118000, 434323000, 434362000, 273432000, 706927000

File Segment: EngPI; EPI;

DWPI Class: T01; P85

Manual Codes (EPI/S-X): **T01-P01**

Set	Items	Postings	Description
S1	5144164	21143434	S LEARN? OR INSTRUCT? OR EDUCAT? OR TUTOR? OR ELEARN? OR TRAIN? OR TEACH? OR SELFTEACH?
S2	2314	8905	S CBT(5N) (COMPUTER OR BASED OR TRAIN?) OR SELFLEARN? OR SELFINSTRUCT? OR SELFEDUCAT? OR SELFTUTOR?
S3	5265429	10792218	S COMPUTER? OR WORKSTATION? OR DESKTOP? OR DATAPROCESSOR? OR MICROPROCESSOR? OR CENTRALPROCESSOR? OR CPU? ?
S4	584637	1266942	S SERVER? OR (DATA OR MICRO OR CENTRAL) () (PROCESSOR? OR CONTROLLER?) OR PC OR MICROCOMPUTER?
S5	483762	882757	S KIOSK? OR CONSOLE? OR TERMINAL? OR CUBICL? OR BOOTH?
S6	704447	5532413	S S1:S2 AND S3:S5
S7	272122	1154928	S DETERMIN? OR ASSESS? OR TEST? OR MEASUR? OR CLASSIF? OR RATE? OR RATING? OR GRADE? OR GRADING?
S8	230649	634445	S EVALUAT? OR MONITOR? OR TRACK? OR AUDIT? OR ASCERTAIN? OR DIAGNOS? OR IDENTIF? OR OBSERV?
S9	219384	593394	S FEEDBACK? OR FEED? () BACK OR APPRAIS? OR ANALY? OR TROUBLESHOOT? OR PROGNOS? OR ASSAY?
S10	282739	1116488	S STUDENT? OR PARTICIPANT? OR PERSON? OR PUPIL? OR TUTEE? OR INDIVIDUAL? OR CUSTOMER? OR CLIENT?
S11	7610	12210	S SUBSCRIBER? OR AUDIENCE? OR VIEWER? OR WATCHER? OR ATTENDANT? OR TEST() SUBJECT?
S12	697	1528	S (PAY OR PAYS OR PAYED OR PAYING) () ATTENTION? OR ATTENTION() SPAN? ? OR LEVEL(2N) CONCENTRATION
S13	3015	32456	S CONCENTRAT? (2N) (ABILITY OR ABLE OR CAPABLE? OR CAPABILIT?) OR ABSENT() MINDED? OR UNFOCUS? OR ATTENTION() DEFICIT? OR BOREDOM? OR ENNUI
S14	421	767	S LACK(2N) (FOCUS? OR ABSORB? OR ABSORP? OR IMMERS? OR ENGROSS? OR ATTENTION?) OR INATTENTIV?
S15	7341	18481	S UNINTEREST? OR DISINTEREST? OR DISOBEY? OR NEGLECT? OR NEGLIGEN? OR DISTRACT? OR UNATTENT?
S16	41290	66561	S INPUT? OR CLICK? () PER() (SECOND? OR MINUTE? OR HOUR?) OR MOUSE() CLICK? OR MOUSECLICK?
S17	421	688	S PUSH SWITCH? OR PRESS SWITCH? OR PUSH ACTUAT? OR PRESS ACTUAT? OR SELECTOR? OR GRAPHIC? () INPUT? () DEVIC?
S18	75	112	S CLICK BUTTON? OR CLICK SWITCH? OR CLICK ACTUAT? OR TOGGL? OR PRESSTOGGL? OR CLICKTOGGL? OR PUSHTOGGL? OR MANIPULAT? () CONTROL? () DEVIC?
S19	673	1196	S MOUSE BUTTON? OR MOUSE SWITCH? OR MOUSE ACTUAT? OR MOUSE TOGGL? OR INPUT? () KEY? ? OR JOYSTICK? OR JOY() STICK?
S20	84	137	S CLICK BOX? OR CLICK? () (B TRACKBALL?
S21	169827	285948	S FIRST? OR 1ST OR PRIMAR OR MAIN OR CHIEF OR INTRODUCTORY?
S22	115266	162987	S ONE OR NUMBER() 1
S23	124801	215382	S SECOND? OR 2ND OR ANOTH SLAVE? OR SUPPLEMENT?
S24	219951	447898	S SUBSIDIAR? OR DIFFERENT OR TWO OR PAIR OR DOUBLE OR TWIN OR TANDEM OR DUAL
S25	149522	233749	S TWO(2W) MORE OR MULTIPLE OR MORE(2W) ONE OR MULTIPLICIT? OR MANY
S26	30239	60178	S WINDOW? OR SCREEN? OR C
S27	38463	89567	S GUI? ? OR GII? ? OR GDI VISUAL?) (2W) (INTERFACE? OR APP? ? OR APPLICAT? OR UT WEBPAGE?
S28	16006	38754	S COMPUTER? () (SCREEN? OR V OR TOOL? ? OR UTILIT?)
S29	287	893	S USERINTERFAC? OR (DROP C DESKTOP) () MANAGER? OR PULLDOWN?
S30	2453	5863	S UI OR UIS OR (GRAPHIC? C DATA?) (2N) (MENU? OR PAGE? OR SCREEN?)
S31	53548	121241	S DISPLAY? OR SCREEN? OR I
S32	2081	5508	S (DISPLAY? ? OR GRAPHIC?
S33	115028	385146	S GRAPHIC? OR VIDEO? OR PICTOR? OR LIQUID DISPLAY? OR PICTOR? OR

Non Pat Lit

B. B. 106.

FILES

Q SIGNIFICANT HITS

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VISUAL?
S34      2361      5254  S CRT? ? OR CATHODE? (2W) TUBE OR COMPUTER() MONITOR?
S35      160792    377413 S TIME? OR TEMPOR? OR DELAY? OR LAPSE? OR CLOCK? OR ELAPS? OR
IDLE?
S36      8083      15882 S TIMING OR STOPWATCH OR TIMEOUT OR TIMESTAMP? OR STOP() WATCH?
OR TIMETABLE?
S37      12595     23302 S CHURN? OR HOURGLASS? OR DURATION? OR LATENC? OR TIMEGAP? OR
TIMERANGE? OR TIMELIMIT?
S38        5        20  S START? () POINT? (3N) (END OR ENDING) () POINT? OR
STARTPOINT? (3N) ENDPOINT?
S39       114       115  S AU= (HO C? OR HO, C? OR TONG P? OR TONG, P?)
S40        18        36  S HO(2N) (CHI OR CHIFAI) OR TONG(2N) (PETE OR PETER)
S41       9446     482649 S S6 AND S7:S9 AND S12:S15
S42       1507     159183 S S41 AND S21:S25(10N) S26:S34
S43       1227     165581 S S42 AND (S16:S20 OR S35:S38)
S44         2        59  S S41:S43 AND S39:S40
S45         2        34  RD (unique items)
S46         2         8  S S39:S40 AND S12:S15
S47         0         0  S S46 NOT S44
S48       9444     525456 S S41:S43 NOT S44
S49       296     91351  S S48 'AND S7:S9(7N) S12:S15 AND S23:S25(7N) S26:S34 AND (S35:S38
OR S16:S20)
S50        74     18573  S S49 AND PY=1970:2001
S51        74     18499  S S49 NOT PY=2002:2007
S52        74     21420  S S50:S51
S53        71     16593  RD (unique items)
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